Feed to Fillets—What Makes Catfish Grow

that question, geneticist Jeffrey T. Silverstein has developed a technique that tracks tiny glass beads mixed with catfish feed as they move through a fish's body.

Until now, it's been difficult to measure how much food an individual fish eats daily, because all fish are raised together in a pond and fed simultaneously.

"It's easier with land animals, because feed can be weighed before and after mealtime and then calculated to determine what each animal consumed," says Silverstein, who is in the ARS Catfish Genetics Research Unit at Stoneville, Mississippi.

Catfish production researchers generally record feed intake based on simple observation. But this method assumes that fish consume all the feed delivered and that they all eat the same amount.

In developing a more precise way to measure catfish feed intake, Silverstein adapted an innovative technique from salmon feeding studies—putting tiny leaded glass beads in

About 0.4 millimeters in diameter, the x-ray opaque glass beads are mixed into the feed in low concentrations—replacing about 1 percent of it. After feeding, catfish are caught, anesthetized, and x-rayed. Silverstein then counts the beads in the fishes' stomachs, so he can accurately calculate feed consumed by each one. The procedure is not lethal.

Fish with superior feed intake and conversion into fillet meat can be identified, says Silverstein, so this trait can be incorporated into breeding programs.

"In indoor tank studies, we've found different catfish strains consume feed at different rates," he says. "This information will help us to make genetic improvements in channel catfish."—By **Tara Weaver-Missick,** ARS.

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